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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,715	01/25/2002	Thomas M. Aune	O119.12-0013	3167

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EXAMINER

OCAMPO, MARIANNE S

ART UNIT PAPER NUMBER

1723

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/056,715	AUNE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Marianne S. Ocampo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION*****Election/Restrictions and Continuity Information***

1. Applicant has filed this instant application 10/056,715 as a DIVISIONAL of US 09/296,070 filed on 4-21-99, which is now US Patent 6,358,417 B1, and based on the restriction/election requirement performed in the parent application (See Paper no. 5 mailed to applicants on 2-15-00. At the time when the restriction/election requirement was made, the elected invention which was the subcombination in the form of a composite filament mass (*the composite filament mass comprising a first cylindrical mass of polymer filaments having diameters of less than about 1.5 microns, a portion of the first mass defining a smooth inner cylindrical surface of the composite filament mass and a second cylindrical mass of filaments surrounding the first mass wherein the polymer filaments of the second mass have diameters greater than 1.5 microns*), and the non-elected invention (i.e. *a non-woven filter cartridge comprising a core member, a first cylindrical mass of polymer filaments having diameters less than about 1.5 microns wherein a portion of the first mass forms a smooth surface positioned adjacent the core member and a second mass of filaments disposed over the first mass of filaments wherein at least some of the filaments in the second mass being intertwined with some of the polymer filaments of the first mass, and further the filter having an efficiency in removing 1 micron particles greater than or equal to at least about 99.9% and wherein the pressure drop across the filter cartridge is less than about 3 lbs./sq. in. for every gallon per minute of flow through a 10 inch long section of the filter cartridge*) which is the subject of this instant invention, have different and distinct inventions. However, in light of the amendments now filed (dated 12-4-03), the subject matter

of this instant application has shifted from what was considered to be a different and distinct invention from that of the parent application, to the subject matter if it was presented at the time of the restriction/election requirement would not have made the examiner determine the inventions to be distinct and different from each other. In other words, applicants have now shifted the subject matter of this current/instant application by means of the most recent amendments filed on 12-4-03 to contain almost the same subject matter of the parent application. Since the subject matter of this instant application has shifted from one type of invention to another (the another being almost the same subject matter as that of the parent application US 09/296,070) as a result of the amendments filed on 12-4-03, the restriction/election requirement is considered now invalid and therefore, the continuity information/designation of this application (i.e. being a DIVISIONAL of US 09/296,070) should be corrected and changed to become a CONTINUATION of US 09/296,070. Any determinations regarding patentability (such as double patenting, etc.) which would not have been applied in a Divisional application, can now be applied to the prosecution of this application, since this instant application is no longer a proper DIVISIONAL application, but actually a CONTINUATION application.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 – 16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a non-woven filter cartridge having a core member, does not reasonably provide enablement for a non-woven filter cartridge without a core member. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. It is clear from applicant's specification that the filter cartridge being formed by the process disclosed in the instant specification and will be used in filtering applications, would require a core member. In other words, there is no disclosure to a coreless filter cartridge.

Regarding claims 2 – 10 and 12 - 16, the claims also suffer the same defects since they depend from base claims 1 and 11, respectively.

4. Furthermore, claims 1 – 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In this instance, the now claimed invention (as a result of the most recent amendment), which is a coreless non-woven filter cartridge, has not been described specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the

time the application was filed, had possession of the claimed invention. There is no support provided for this type of (i.e. coreless) filter cartridge in the instant specification.

### *Specification*

5. The first sentence under the heading of CROSS REFERENCE TO RELATED APPLICATIONS, should also be corrected to include the proper status of US parent application 09/296,070 filed on 4-21-99 (i.e. now US Patent 6,358,417 B1 issued on March 19, 2002).

### *Double Patenting*

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

7. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

8. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1 – 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Clack (US 5,366,576) in view of claims 1 - 5 of U.S. Patent No. 6,358,417 B1 to Aune et al..

10. Concerning claim 1, Clack discloses a non-woven filter cartridge (22) comprising a first cylindrical mass (24, 46) of essentially continuous, intertwined and thermally bonded polymer filaments, the polymer filaments of the first mass (i.e. those filaments (24) that are formed by orifice right below the first gear pump 46) having a finer/smaller diameter than those filaments (24) formed by other orifices right below the second and third gear pumps (48 & 50), and a second cylindrical mass of essentially continuous, intertwined and thermally bonded polymer filaments (24, 48 and/or 24, 50) adjacent to the first mass of filaments, the polymer filaments of the second mass having diameters relatively larger/coarser filaments than those in

the first mass, and surrounding the first cylindrical mass (24, 46), as in figs. 1 & 7 and cols. 3 – 8.

Although Clack fails to disclose the first cylindrical mass of filaments having diameters of less than about 1.5 microns and the second cylindrical mass of filaments having diameters greater than about 1.5 microns and the cartridge having an efficiency in removing 1 micron particles greater than or equal to at least 99.9% and the pressure drop across the filter cartridge being less than about 3 lbs/sq.in. for every gallon per minute of flow through a 10 inch long section of the cartridge, it is considered obvious to one of ordinary skill in the art at the time of the invention to modify the diameters of the first and second cylindrical mass of filaments such that the diameters of the first cylindrical mass being less than about 1.5 microns and of the second cylindrical mass being greater than 1.5 microns, as a choice/desired result by the manufacturer in order to provide a depth filter which could trap/remove very small particulate matter from fluids. In the case law, *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)], cert. Denied, 469 U.S. 830, 225 USPQ 232 (1984), the Fed. Circuit has held that where the only difference between the prior art (Clack) and the claims was a recitation of relative dimensions of the claimed device (diameters of the filaments) and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In this instance, Clack disclosed the fibers/filaments forming by the first orifice (46/first zone formed by the die right below gear pump 46) which would form the first mass of filaments around/onto the rotating mandrel would have a smaller/finer diameter than those filaments formed by successive die orifices (right below



gear pumps 48 & 50), as in figures 1 & 7 and in col. 4, lines 2 – 12, similar to the claimed invention except that the claimed invention include values of diameters for the filament masses.

11. Claim 1 of Aune et al.'s (US 6,358,417B1) patent teaches a composite filament mass comprising a first cylindrical mass of essentially continuous, intertwined and thermally bonded polymer filaments having diameters of less than about 1.5 microns (considered to be very fine fibers), and a second cylindrical mass of essentially continuous, intertwined and thermally bonded polymer filaments having diameters greater than about 1.5 microns (larger fibers compared to those in the first cylindrical mass), as in cols. 7 - 8.

12. Concerning the filter cartridge's properties which include having an efficiency in removing 1 micron particles greater than or equal to at least 99.9% and the pressure drop across the filter cartridge being less than about 3 lbs/sq.in. for every gallon per minute of flow through a 10 inch long section of the cartridge, it is considered by the examiner that the resulting product based on the combination of teachings of Clack with that of the claims of Aune et al.'s patent (417), would provide/inherently possess these properties of the claimed invention. Note that Aune et al.'s disclosure also mentioned the depth filters (i.e. filter cartridges) formed of the composite filament mass claimed in claim 1 would provide an efficiency in removing 1 micron particles greater than or equal to at least 99.9% and the pressure drop across the filter cartridge being less than about 3 lbs/sq.in. for every gallon per minute of flow through a 10 inch long section of the cartridge, in col. 7, lines 2 – 9.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the first and second cylindrical masses of polymer filaments (forming one composite filament mass) of Clack, by adding the embodiment taught by Aune et al., in order to provide an alternative and improved non-woven (depth) filter cartridge which is capable of removing very small/minute unwanted particulates from a fluid.

13. Regarding claim 2, Clack, as modified by Aune et al. (417), has taught the limitations of claim 1 above. Claim 3 of US Patent 6,358,417 B1 also teaches the filaments of the first mass having diameters of less than about 1 micron, as in col. 8, lines 18 – 20. The same motivation applied in claim 1 is applied here.

14. With respect to claim 3, Clack, as modified by Aune et al. (417), has taught the limitations of claim 1 above. Claim 5 of US Patent 6,358,417 B1 also discloses the filaments of the second mass having diameters ranging from about 4 microns to about 10 microns, as in col. 8, lines 24 – 28. The same motivation applied in claim 1 is applied here.

15. Concerning claim 4, Clack, as modified by Aune et al. (417), has taught the limitations of claim 1 above. Although Clack, as modified by Aune et al.'s claims do not explicitly disclose the filter cartridge's property of having the pressure drop across the filter cartridge being less than about 3 lbs/sq.in., particularly being about 1.5 lbs/sq.in., for every gallon per minute of flow through a 10 inch long section of the cartridge, it is considered by the

examiner that the resulting product based on the combination of teachings of Clack with that of the claims of Aune et al.'s patent (417), would provide/inherently possess this property of the claimed invention. Note that Aune et al.'s disclosure also mentioned the depth filters (i.e. filter cartridges) formed of the composite filament mass claimed in claims 1 and 4, would have pressure drops across the filter cartridge being less than about 3 lbs/sq.in. (about 1.5 p.s.i.d.) for every gallon per minute of flow through a 10 inch long section of the cartridge, in col. 7, lines 2 – 9.

16. With regards to claim 5, Clack, as modified by Aune et al. (417), has taught the limitations of claim 1 above. Claim 1 of US 6,358,417 B1 further teaches the first mass of polymer filaments comprising a first filament zone and a second filament zone, the first filament zone defining a calendered layer having a density of filaments substantially greater than that of the second filament zone, as in col. 7, lines 25 – 29. The same motivation applied in claim 1 is being applied here.

17. Regarding claim 6, Clack, as modified by Aune et al. (417), has taught the limitations of claim 5 above. Claim 1 of US 6,358,417 B1 also teaches the filaments of the first filament zone being /defining the smooth inner surface of the mass (therefore would have to be closest to the mandrel/collecting mandrel) and the second filament zone would then have to be surrounding or disposed on top of the first filament zone, as in cols. 7 - 8.

18. With respect to claim 7, Clack, as modified by Aune et al. (417), has taught the limitations of claim 6 above. Claim 2 of US Patent 6,358,417 B1 further teaches the calendered layer having a thickness of about 5 mils, as in col. 8, lines 13 – 14.

19. Concerning claim 8, Clack, as modified by Aune et al. (417), has taught the limitations of claim 7 above. Claim 2 of US Patent 6,358,417 B1 also teaches the second filament zone and the second cylindrical mass each being substantially thicker than about 5 mils, as in col. 8, lines 14 – 17.

20. With regards to claim 9, Clack, as modified by Aune et al. (417), has taught the limitations of claim 1 above. Claim 4 of US Patent 6,358,417 B1 further teaches a region or portion in which at least some of polymer filaments from the first mass being intertwined and thermally bonded with polymer filaments from the second mass (i.e. forming a transition region) as in col. 8, lines 20 – 24.

21. Regarding claim 10, Clack, as modified by Aune et al. (417), has taught the limitations of claim 1 above. Claim 1 of US Patent 6,358,417 B1 further teaches a calendered layer in the first filament mass defined by a first filament zone, which has a greater density of filaments than those in a second filament zone in the first filament mass, thereby providing a density gradient between the first filament mass and the second filament mass, as in col. 7, lines 25 - 30.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter cartridge of Clack, by adding the embodiment taught by Aune et al., in order to provide an improved filter cartridge which allows greater porosity (due to less density of filaments providing more open spaces for fluid) in one portion of the cartridge and less porosity in another portion thereof, which would allow some particles larger than those open spaces to be trapped first while allowing some fluid flow to the another portion of the cartridge, thereby increasing the life of the filter cartridge.

22. Concerning claim 11, Concerning claim 1, Clack discloses a non-woven filter cartridge (22) comprising a first cylindrical mass (24, 46) of essentially continuous, intertwined and thermally bonded polymer filaments, the polymer filaments of the first mass (i.e. those filaments (24) that are formed by orifice right below the first gear pump 46) having a finer/smaller diameter than those filaments (24) formed by other orifices right below the second and third gear pumps (48 & 50), and a second cylindrical mass of essentially continuous, intertwined and thermally bonded polymer filaments (24, 48 and/or 24, 50) adjacent to the first mass of filaments, the polymer filaments of the second mass having diameters relatively larger/coarser filaments than those in the first mass, and surrounding the first cylindrical mass (24, 46), as in figs. 1 & 7 and cols. 3 – 8.

Although Clack fails to disclose the first cylindrical mass of filaments having diameters of less than about 1.5 microns, wherein a portion of the first mass of filaments forms a calendered layer and the second cylindrical mass of filaments having diameters greater than

about 1.5 microns, at least some of the polymer filaments in the second mass being intertwined with some of the polymer filaments in the first mass, and the cartridge having an efficiency in removing 1 micron particles greater than or equal to at least 99.9% and the pressure drop across the filter cartridge being less than about 3 lbs/sq.in. for every gallon per minute of flow through a 10 inch long section of the cartridge, it is considered obvious to one of ordinary skill in the art at the time of the invention to modify the diameters of the first and second cylindrical mass of filaments such that the diameters of the first cylindrical mass being less than about 1.5 microns and of the second cylindrical mass being greater than 1.5 microns, as a choice/desired result by the manufacturer in order to provide a depth filter which could trap/remove very small particulate matter from fluids. In the case law, *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)], cert. Denied, 469 U.S. 830, 225 USPQ 232 (1984), the Fed. Circuit has held that where the only difference between the prior art (Clack) and the claims was a recitation of relative dimensions of the claimed device (diameters of the filaments) and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In this instance, Clack disclosed the fibers/filaments forming by the first orifice (46/first zone formed by the die right below gear pump 46) which would form the first mass of filaments around/onto the rotating mandrel would have a smaller/finer diameter than those filaments formed by successive die orifices (right below pump 46) which would form the first mass of filaments around/onto the rotating mandrel would have a smaller/finer diameter than those filaments formed by successive die orifices (right below gear pumps 48 & 50), as in figures 1 & 7 and in col. 4, lines 2 – 12,

similar to the claimed invention except that the claimed invention include values of diameters for the filament masses.

23. Claims 1 and claim 4 of Aune et al.'s (US 6,358,417B1) patent teaches a composite filament mass comprising a first cylindrical mass of essentially continuous, intertwined and thermally bonded polymer filaments having diameters of less than about 1.5 microns (considered to be very fine fibers), the first mass comprising a first filament zone and a second filament zone, in which the first filament zone (a portion of the first filament mass) forming/defining a calendered layer, and a second cylindrical mass of essentially continuous, intertwined and thermally bonded polymer filaments having diameters greater than about 1.5 microns (larger fibers compared to those in the first cylindrical mass), wherein at least some of the filaments in the first mass are intertwined and thermally bonded to the filaments from the second mass, as in cols. 7 - 8.

24. Concerning the filter cartridge's properties which include having an efficiency in removing 1 micron particles greater than or equal to at least 99.9% and the pressure drop across the filter cartridge being less than about 3 lbs/sq.in. for every gallon per minute of flow through a 10 inch long section of the cartridge, it is considered by the examiner that the resulting product based on the combination of teachings of Clack with that of the claims 1 & 4 of Aune et al.'s patent (417), would provide/inherently possess these properties of the claimed invention. Note that Aune et al.'s disclosure also mentioned the depth filters (i.e. filter cartridges) formed of the composite filament mass claimed in claim 1 (of Aune et al.) would provide an efficiency in

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removing 1 micron particles greater than or equal to at least 99.9% and the pressure drop across the filter cartridge being less than about 3 lbs/sq.in. for every gallon per minute of flow through a 10 inch long section of the cartridge, in col. 7, lines 2 – 9.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the first and second cylindrical masses of polymer filaments (forming one composite filament mass) of Clack, by adding the embodiment taught by Aune et al., in order to provide an alternative and improved non-woven (depth) filter cartridge which is capable of removing very small/minute unwanted particulates from a fluid.

25. With respect to claim 12, Clack, as modified by Aune et al. (417), has taught the limitations of claim 11 above. Claim 3 of US Patent 6,358,417 B1 teaches the filaments of the first mass having diameters of less than about 1 micron, which would included those values in the claimed range of between about 0.5 microns and about 1 micron, as in col. 8, lines 18 – 20. In the case where claimed ranges “overlap or lie inside ranges disclosed by the prior art”, a prima facie case of obviousness exists. In case law, In re Geisler, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997), a claim reciting thickness of a protective layer as falling within a range of “50 –100 Angstroms” considered prima facie obvious in view of the prior art reference teaching that “for suitable protection, a thickness of the protective layer should be not less than about 10 nm (i.e. 100 Angstroms)”. The court stated that “by stating that “suitable protection” is provided if the protective layer is “about 100 Angstroms thick, the prior art directly teaches the use of a thickness within the applicant’s claimed range. See M.P.E.P.



section 2144.05 part I (Overlap of Ranges). The same motivation applied in claim 11 is applied here.

26. With regards to claim 13, Clack, as modified by Aune et al. (417), has taught the limitations of claim 11 above. Claim 5 of US Patent 6,358,417 B1 also teaches the filaments of the second mass having diameters ranging from about 4 microns to about 10 microns, as in col. 8, lines 24 – 27. The same motivation applied in claim 11 is applied here.

27. Concerning claim 14, Clack, as modified by Aune et al. (417), has taught the limitations of claim 11 above. Clack further discloses the filaments of the second mass (those formed by die orifices below gear pumps 48 & 50) having diameters larger than the diameters of the filaments of the first mass (those formed by die orifice below gear pump 46), as in col. 4, lines 2 – 12 and figs. 1 & 7.

28. Regarding claim 15, Clack, as modified by Aune et al. (417), has taught the limitations of claim 11 above. Claim 2 of US Patent 6,358,417 B1 also teaches the calendered layer having a thickness of about 5 mils, as in col. 8, lines 12 - 15. The same motivation applied in claim 11 is applied here.

29. With regards to claim 16, Clack, as modified by Aune et al. (417), has taught the limitations of claim 11 above. Claim 2 of US Patent 6,358,417 B1 further teaches the second

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cylindrical mass being substantially thicker than about 5 mils, as in col. 8, lines 15 - 17. The same motivation applied in claim 11 is applied here.

***Response to Amendments and Arguments***

30. Applicant's amendments and arguments filed on 12-4-03, with respect to claims 1 - 16 have been considered but are moot in view of the new grounds of rejections based on the combination of Clack (US 5,366,576) and Aune et al. (US 6,358,417 B1).

31. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

*Conclusion*

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (571) 272-1144. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

33. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

34. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
M.S.O.

  
W. L. WALKER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700